CLAIMS

What is claimed is:

1.   A method for identifying repeated fields in a video sequence comprising:

determining a first set and second set of motion vectors from input video frames of a video sequence;

identifying a repeated field by comparing the first set and second set of motion vectors to a first threshold.

2.   The method of claim 1, wherein the first set of motion vectors is between a first field of a first frame and a first field of a second frame, and the second set of motion vectors is between a second field of a first frame and a second field of a second frame.

3.   The method of claim 1, wherein input video frames further comprise a first frame having a first and second field, a second frame having a first and second field, and a third frame having a first and second field.

4.   The method of claim 3, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, and the second set of motion vectors is between the second field of the first frame and the second field of the second frame, the method further comprising:

determining a third set of motion vectors between the first field of the second frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the second set of motion vectors to the first threshold, comparing a second ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, and identifying a repeated field if the first ratio and the second ratio are less than the first threshold.

5.   The method of claim 3, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, and identifying a repeated field if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.

6.   The method of claim 3, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame and a fourth set of motion vectors between the second field of the first frame and the second field of the third frame; and

wherein identifying further comprises comparing a first ratio of the sum of the first set of motion vectors minus the third set of motion vectors and the first set of motion vectors to the first threshold, comparing a second ratio of the sum of the second set of motion vectors minus the fourth set of motion vectors and the sum of the first set of motion vectors minus the third set of motion vectors to a second threshold, comparing the third set of motion vectors to the fourth set of motion vectors, and identifying a repeated field if the first ratio is less than the first threshold, the second ratio is greater than the second threshold, and the magnitude of the third set of motion vectors is less than the magnitude of the fourth set of motion vectors.

7.   The method of claim 3, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, determining whether a repeated field exists if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.

8.   The method of claim 1, wherein the first threshold is a heuristically determined value.

9.   The method of claim 1, wherein if a repeated field is identified, replacing the repeated field with a reference to a field from which the repeated field is repeated.

10.   The method of claim 1, wherein if a repeated field is identified, averaging the repeated field and a field from which the repeated field is repeated.

11.   A video device comprising:
        an input configured to received input video frames;
        motion vector logic determining a first set and second set of field motion vectors;
        a processor identifying a repeated field by comparing a ratio of the first and second sets of field motion vectors to a threshold.

12.   The video device of claim 11 wherein if the processor identifies a repeated field, the processor to replace the repeated field with a reference to a field from which the repeated field is repeated.

13.   The video device of claim 11, wherein if the processor identifies a repeated field, the processor to average the repeated field with a reference field from which the repeated field is repeated.

14.   The video device of claim 11 wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame;

said logic further determining a third set of motion vectors between the first field of the second frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the second set of motion vectors to the first threshold, comparing a second ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, and identifying a repeated field if the first ratio and the second ratio are less than the first threshold.

15. The video device of claim 11 wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said logic a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, and identifying a repeated field if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.

16. The video device of claim 11 wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said logic further determining a third set of motion vectors between the first field of the first frame and the first field of the third frame and a fourth set of motion vectors between the second field of the first frame and the second field of the third frame; and

wherein identifying further comprises comparing a first ratio of the sum of the first set of motion vectors minus the third set of motion vectors and the first set of motion vectors to the first threshold, comparing a second ratio of the sum of the second set of motion vectors minus the fourth set of motion vectors and the sum of the first set of motion vectors minus the third set of motion vectors to a second threshold, comparing

the third set of motion vectors to the fourth set of motion vectors, and identifying a repeated field if the first ratio is less than the first threshold, the second ratio is greater than the second threshold, and the magnitude of the third set of motion vectors is less than the magnitude of the fourth set of motion vectors.

17.   The video device of claim 11, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said logic further determining a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, determining whether a repeated field exists if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.

18.   A computer readable medium storing executable computer program instructions which, when executed by a processor, cause the processor to perform a method comprising:

determining a first and second set of motion vectors from input video frames;

determining whether a repeated field exists by comparing the first and second set of motion vectors to a first threshold.

19.   The computer readable medium of claim 18, wherein if a repeated field is found, replacing the repeated field with a reference to a field from which the repeated field is repeated.

20.   The computer readable medium of claim 18, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, and the second set of motion vectors is between the second field of the first frame and the second field of the second frame, the method further comprising:

determining a third set of motion vectors between the first field of the second frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the second set of motion vectors to the first threshold, comparing a second ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, and identifying a repeated field if the first ratio and the second ratio are less than the first threshold.

21.   The computer readable medium of claim 18, wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, and identifying a repeated field if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.

22.   The computer readable medium of claim 18 wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame and a fourth set of motion vectors between the second field of the first frame and the second field of the third frame; and

wherein identifying further comprises comparing a first ratio of the sum of the first set of motion vectors minus the third set of motion vectors and the first set of motion vectors to the first threshold, comparing a second ratio of the sum of the second set of motion vectors minus the fourth set of motion vectors and the sum of the first set of

motion vectors minus the third set of motion vectors to a second threshold, comparing the third set of motion vectors to the fourth set of motion vectors, and identifying a repeated field if the first ratio is less than the first threshold, the second ratio is greater than the second threshold, and the magnitude of the third set of motion vectors is less than the magnitude of the fourth set of motion vectors.

23.   The computer readable medium of claim 18 wherein the first set of motion vectors is between the first field of the first frame and the first field of the second frame, the second set of motion vectors is between the second field of the first frame and the second field of the second frame;

said method further comprising determining a third set of motion vectors between the first field of the first frame and the first field of the third frame; and

wherein identifying further comprises comparing a first ratio of the first set of motion vectors and the third set of motion vectors to the first threshold, comparing a second ratio of the second set of motion vectors and the first set of motion vectors to a second threshold, determining whether a repeated field exists if the first ratio is less than the first threshold and the second ratio is greater than the second threshold.